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DESCRIPTIONS OF A FEW NEW DIAPHORUS FROM THE WESTERN STATES (DIPTERA).

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The seven species here described came into my hands soon after my revision of this genus was published in the Bulletin of the Buffalo Society of Natural Sciences, Vol. xi, No. 2, 1915.

I found the genus *Diaphorus* much better represented in California than was *Chrysotus* both as to species and individuals during my stay there from February to June, 1915. In the eastern states the *Chrysotus* are by far the more numerous.

One of the species included here is from Virginia; it came to hand after the others were described.

Diaphorus californicus sp. nov.

Male: Length, 3-4 mm. Front narrow, about as wide at the narrowest part as the width of the ocellar tubercle, wider below; face about as wide as long; face and front thickly covered with white pollen; antennæ black, third joint small, rather flattened in outline at tip with the arista inserted at the upper corner; palpi and proboscis black. Thorax and abdomen green, dulled with rather thick gray pollen; venter black; hairs of the abdomen black; hypopygium concolorous with the abdomen, its appendages are rather large brown lamellæ the outer part of which are nearly oval with a short slender stem and are fringed with long black hairs. Coxæ and legs black with the trochanters, knees and base of fore tibiæ yellowish brown (in the Alpine specimen almost wholly black); fore coxæ with black hairs and a row of black bristles the whole length of the front surface; the black hairs on the under side of the femora long, those on the hind pair rapidly increasing in length towards the apex, those at its base very short;

pulvilli of fore tarsi as long as the fifth tarsal joint, those of middle and hind tarsi about equal in size but not nearly as large as those of fore tarsi. Tegulae and halteres pale yellow, the cilia of the former black. Wings tinged with gray, slightly brownish at extreme base; veins black; first vein reaching nearly half the distance to the tip of the second vein.

Described from three males from California. Two taken at Los Cerritos, Los Angeles Co., March 21, and April 3, and one taken at Alpine, San Diego Co., April 10.

This closely resembles *D. lamellatus* Læw but differs in the shape of the lamellae of the hypopygium and in having longer hair on the under side of the hind femora on their apical half. The lamellae of *lamellatus* are gradually narrowed towards their base while this species has them narrowed abruptly into a slender stem.

Diaphorus nudus sp. nov.

Male: Length, 2.5 mm. Face about as broad as long, covered with gray pollen; palpi black, eyes contiguous; antennae small, black, third joint rounded at tip about as long as broad; arista subapical; orbital cilia blackish. Thorax dark brown with brownish gray pollen and with a very slight greenish reflection posteriorly. Abdomen black; shining on the dorsum, in well preserved specimens with light gray pollen on the sides which contrasts strongly with the center of the dorsum; hairs of the abdomen black; hypopygium small with its appendages scarcely visible, the bristles at its tip of moderate size. Coxae and femora black; extreme tips of fore femora, tibiae and first two tarsal joints of all feet yellow, extreme tips of hind tibiae and tips of first two tarsal joints of all feet black; tarsi blackened from the third joint; fore femora nearly bare below; fore tarsi about one and one-half times as long as their tibiae; fore pulvilli enlarged; fore tibiae without bristles; middle tibiae with one minute bristle before basal third, a little shorter than their tarsi; hind tibiae with three or four small hair-like bristles above, slightly longer than their tarsi. Tegulae brown with brown cilia; knob of halteres pale yellow, stem dark brown. Wings grayish hyaline; veins brown; first vein reaching half way to the tip of the second vein; fourth vein ending a little back of the tip of the wing; last section of fifth vein about twice as

long as the cross-vein; costa somewhat enlarged from the tip of the first vein to beyond the tip of second vein; anal angle prominent.

Female: Front as wide as the face, covered with gray pollen, and with a black spot in the center which is quite conspicuous when viewed from in front; tarsi a little shorter than in the male, infuscated from the tip of the first joint. Abdomen and wings as in the male.

Described from two males and one female taken at Wallops Island, Va., May 25 and June 1, by W. L. McAtee.

This differs from *D. opacus* Læw in having the knobs of the halteres pale yellow, and having the first vein of the wing longer; from *D. adustus* V. D. it differs in having the tibiæ, base of tarsi and knob of halteres yellow and the first vein longer. From *D. contiguus* Ald. to which it seems to be more closely related in having the tegulæ brown and the femora nearly bare below.

Diaphorus junctus sp. nov.

Male: Length, 3–3.5 mm. Face blackish green, as wide as long; eyes contiguous on the front; antennæ small, black, third joint somewhat rounded at tip but slightly indented where the arista is inserted which is to one side of the center; orbital cilia black. Thorax and abdomen dark green, quite shining but dulled with grayish pollen which often leaves three shining vittæ on the thorax and a dark central line on the abdomen; incisures of the abdomen black; in some specimens there are coppery reflections on the thorax and in others the whole body is more steel-blue; pleuræ more black than the dorsum; hypopygium small, the bristles at its tip strong but somewhat variable as to length, its appendages usually invisible but in some specimens quite prominent, depending on the position of the hypopygium; they seem to consist of a claw-like hook directed toward the base of the abdomen and a pair of blunt appendages just back of this hook, a short central filament still further in, and outside of the hook a small rounded elevation fringed with hairs (this elevation can be seen in most species of the genus). Coxæ, feet, tegulæ, their cilia and the halteres black. Fore femora with a row of black hairs along the lower posterior edge which are as long as the thickness of the femora; hind femora with only three or four below near the tip. Wings tinged with brown; veins black; first vein reaching half

the distance from the root of the wing to the tip of the second vein.

Female: Differs from the male in having the knob of the halteres yellow; the front as wide as the face and covered with yellowish white pollen; face as wide as long, divided near the center of its length by a sinuated suture, pollen of the face white.

Described from nineteen males and eight females taken in Los Angeles Co., Calif., April 3-29.

D. junctus is very much like *D. gibbosus* V. D. but has grayish pollen on the thorax, while that on the thorax of *gibbosus* is distinctly brown. The appendages of the hypopygium seem more complex than in *gibbosus* but these cannot always be seen and I have not seen the hypopygium of *gibbosus* stretched out to any extent. The pulvilli of the middle and hind feet seem a little more developed, it seems less variable than *gibbosus* which measures from 2-3 mm. and in which the tibiæ vary in color from quite yellow to wholly black, while I have not seen any specimens of this species in which the tibiæ were not black.

I think there is no doubt that this is a distinct species from that found in the east, the color of the pollen of the thorax seems to separate it and in life its brighter metallic color give it a very different appearance from our eastern species. I found it abundant in Los Angeles along the river on foliage, also took it at Los Cerritos by the Los Angeles river on foliage and on the wet sand.

Diaphorus snowii sp. nov.

Male: Length, 4 mm. Eyes contiguous on the center of the front, or nearly so; face a little longer than wide, almost black and with dark gray pollen; palpi and proboscis black; antennæ black, third joint slightly wider than long, flattened at tip in outline and with a slight notch for the insertion of the arista; inferior orbital cilia delicate but rather long and of a sordid whitish color. Thorax green with thin gray pollen, sometimes with longitudinal coppery stripes; pleuræ more blackish. Abdomen dark green, moderately shining; hypopygium conspicuous, concolorous with the abdomen, its appendages very small brownish lamellæ with black hairs, bristles at tip rather large; venter black with brownish hairs. Coxæ and feet altogether black, except knees and fore trochanters which are more or less yellowish; all the pulvilli much enlarged;

fore tibiae without bristles; bristle near the base of the middle tibiae small; bristles of hind tibiae short but stout; fore and middle femora with a row of stout, bristle-like hairs below their entire length; hind femora with long brown hairs; all tarsi with a few longer hairs at tip of fifth joint, those of fore tarsi as long as that joint. Halteres yellow; tegulae yellowish with more or less of a black border and black cilia. Wings tinged with brown, especially in front, sometimes yellow at the root; costa a little stouter beyond the tip of the first vein; first vein reaching about two fifths of the distance to the tip of the second vein; fourth vein ending in the apex of the wing.

Described from two males; one taken in Oak Creek Canyon, Ariz. (6000 ft.), by F. H. Snow, to whom the species is dedicated. Type in the Kansas University Collection. Since returning this specimen I have received a specimen taken at Grant, Colo. (Alt. 10,000 ft.), by L. O. Jackson, which I have used in completing the above description; this paratype was received from the U. S. Dept. of Agriculture, Bureau of Biological Survey, Washington, D. C., and has been returned to them.

Diaphorus sparsus sp. nov.

Male: Length, 4 mm. Eyes contiguous on the front; third antennal joint small, scarcely as long as wide, rather flattened in outline at base and tip; arista apical. Thorax and abdomen dark metallic green; base of abdominal segments and three indistinct and rather broken lines on the thorax coppery; pollen of thorax gray; bristles at tip of abdomen rather large. Coxae, femora and hind tibiae and tarsi black; fore and middle tibiae and their metatarsi yellow; middle tibiae in type specimen without bristles; pulvilli of all feet enlarged. Tegulae and their cilia blackish; knobs of halteres pale yellow, their stems brownish. Wings tinged with brownish; veins dark brown.

Described from one male from Virginia, labeled Glencarlyn to mouth 4-in Run, June 11, 1916 (W. L. McAtee).

This species is very much like *D. spectabilis* Læw, but has the hind tibiae and tarsi deep, shining black; the pollen of the thorax is also gray, in *spectabilis* the pollen of the thorax is yellowish brown and all tibiae are light yellow, at most brownish yellow.

The name refers to the broken coppery lines on the thorax but

these may prove to be wanting in some specimens when the species is better known.

Diaphorus inornatus sp. nov.

Male: Length, 2.5–3 mm. Face a little longer than wide, silvery; front green with the pollen of the face extending onto the lower portion a little; palpi yellowish white, blackish at base, rather large; lateral and lower orbital cilia white, abundant; antennæ black, third joint small with a short point near the center of the tip; arista apical. Thorax green, slightly dulled with gray pollen; pleuræ more blackish. Abdomen green with gray pollen along the sides; hypopygium small, its appendages concealed, the bristles at tip small but distinct in some specimens, in others scarcely noticeable. Coxæ black; femora dark green; tips of femora, fore trochanters, tibiæ and base of fore and middle tarsi yellow; tips of hind tibiæ, hind tarsi and fore and middle tarsi from the tip of the first joint infuscated; pulvilli of fore tarsi scarcely enlarged. Tegulæ, their cilia and the halteres whitish. Wings nearly hyaline; veins black; yellow at the extreme root of the wings; first vein reaching about one half the distance to the tip of the second.

Described from three males from California. Two were taken at Alpine, San Diego Co., April 10, and one taken at Fresno, May 6.

Diaphorus vulsus sp. nov.

Male: Length, 3 mm. Face a little narrower than the front, slightly wider below, covered with silvery white pollen; palpi white; front green with considerable white pollen; antennæ black, third joint somewhat triangular, pointed, scarcely as long as the width of the base; arista apical; lateral and inferior orbital cilia white, those above the eyes black. Thorax and abdomen metallic green with grayish white pollen, which is thickest on the pleuræ, metanotum and sides of thorax and abdomen; incisures of the abdomen very narrowly yellowish; venter yellowish brown at base; hypopygium concealed, its appendages very small, bristles at tip small. Fore coxæ and all the legs yellow; hind femora very slightly brownish above at tip; tarsi brownish almost from their base, black at tip; pulvilli of fore tarsi large white, those of middle and hind tarsi small; fore tarsi with minute pale hairs and black bristles;

each femora with a few small bristle-like hairs at tip on the lower posterior edge; middle tibiae with only one bristle which is large, stout, black and inserted on the anterior side near the base; hind tibiae with several bristles above, three or four of which are larger than the rest, the one near the base is the largest; feet slender, the fore tarsi longer than their tibiae, middle tarsi about equal to their tibiae in length, and hind tarsi shorter than their tibiae. Tegulae and knob of halteres pale yellow, stem of halteres brownish; cilia of the tegulae yellow, yet appearing nearly black in certain lights. Wings grayish hyaline, tinged with yellowish brown in front of the third vein; first vein reaching about half the way to the tip of second vein; fourth vein ending in the apex of the wing; costa rather stout, black; veins brownish, yellow at the root of the wings.

Female: Agrees with the male except in sexual characters and that the face is wider and not silvery but rather thickly covered with white pollen and the third antennal joint is smaller.

Described from one male and two females taken at Bill William's Fork, Ariz., Aug. and Sept., by F. H. Snow.

Type in the Kansas University collection.

This species agrees with *D. variabilis* V. D. in most characters but differs in having no small bristle on the top of the middle tibiae, there being no bristles on them except the large one near the base in front, in *variabilis* this small bristle is distinct as well as the preapical one on the outer side of the hind femora which is also lacking in this species; the body and legs are more slender and the wings and wing-veins more yellowish than in *variabilis*. Although these two species resemble each other so much yet I feel sure they are distinct.